

# FORESTRY

## **Bachelor of Science degree with a major in Forestry —**

with concentrations in:

Forest Hydrology  
Forest Operations  
Forest Restoration  
Forest Soils  
Tribal Forestry  
Wildland Fire Management

## **Minor in Fire Ecology**

## **Minor in Forestry**

## **Minor in Watershed Management**

See *Natural Resources* for details on the *Master of Science degree*.

## **Department Chair**

David F. Greene Ph.D.

## **Department of Forestry and Wildland Resources**

Forestry Building 205  
707-826-3935  
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## **The Program**

Students completing this program will have demonstrated:

- understanding of taxonomy, autecology of trees, plant and wood identification; physiology of trees; ecological concepts, ecosystem processes, structure and function; soil formation, classification, composition and properties; silvicultural principles, stand structure and composition; growth and quality of forests and forest health; fire ecology and use of fire; entomology and pathology; wildlife and fish ecology; plant, soil, water interactions, watershed processes, land measurement, mapping, photogrammetry, remote sensing; sampling theory and methods, statistical literacy; measurement of trees, forests, and forest products; wildlife habitat assessment; measurement of water yields and quality; assessment of non-timber forest values; integrated forest management, multiple-use principles; stand scale management; system and landscape management; forest engineering and road design; harvesting systems; utilization; policy development, sociological influences; administration, environmental regulation; land and resource planning; budgeting, finance, personnel management, cost, and economics

- capable practice of critical thinking; writing; quantitative thinking; public speaking, debate and persuasion; leadership; group cooperation; conflict resolution; time management; professional integration; independent

life-long learning; computer literacy and skills

- the attributes of adaptability; integrity; open-mindedness; professional decorum.

Humboldt State University is located in the heart of the coast redwood forest. This environment provides outdoor classrooms for more than half of the forestry courses. Field trips illustrate lecture concepts and teach field techniques.

Excellent on-campus laboratories complement the outdoor lab. Students have access to the college forest, the Schatz Tree Farm, public and private forest lands, and various production centers. Because Humboldt County also has a large forest products industry, Humboldt State is an excellent place to study the resolution of environmental issues with economic concerns.

Students and faculty interact with professional forest managers and researchers of the region both in the classroom and in the field.

Forestry is an incorporative discipline, drawing from the biological, physical, social, and managerial sciences. The curriculum aids in understanding the biological complexities of the forest and the interactions between the forest and social and economic demands.

The program provides sufficient background and depth of education to give a sound basis for professional growth within a broad range of forestry-related careers. Our graduates often start as forest rangers, park rangers, fire fighters, timber cruisers, or surveyors. Some hold staff positions in the federal and state agencies, forest products industry, or with environmental organizations. Graduates go on to build careers in: wildland fire management, forest management, forest protection, park management, watershed management, forest biology, forest engineering, industrial management, resource planning, forest restoration, and research and education.

Visit our webpage at [fwr.humboldt.edu](http://fwr.humboldt.edu).

## **Preparation**

In high school, take a broad background. Biological/physical sciences, mathematics, social sciences, and the arts are helpful.

## **REQUIREMENTS FOR THE MAJOR**

*For a description of degree requirements to be fulfilled in addition to those listed below for the major, please see "The Bachelor's Degree" section of the catalog,*

*pp. 67-82. "The Master's Degree" on page 83.*

## **Unit Requirements**

<b>Core units</b>	<b>64</b>
<b>Concentration units:</b>	<b>28-31</b>
<b>Total units in the major:</b>	<b>92-95</b>
<b>Total units required for the degree:</b>	<b>120</b>

## **Special Grade Requirement**

Students must complete all courses in the major with a C- or better.

## **Core Courses (64 units)**

*The following core courses are required for all forestry majors.*

### **Lower Division**

*Complete at least one course in a basic biological science that meets general education requirements and is comparable to:*

BOT 105 (4) General Botany

*Complete at least one course in a basic physical science that meets general education requirements and is comparable to:*

CHEM 107 (4) Fundamentals of Chemistry

*Complete the following:*

ESM 105 (3) Natural Resource Conservation

FOR 130 (3) Dendrology

FOR 131 (3) Forest Ecology

FOR 210 (4) Forest Measurements and Biometry

FOR 222 (2) Forest Health and Protection

FOR 223 (2) Intro to Wildland Fire

FOR 250 (3) Intro to Forest Operations

GSP 101 (2) Geospatial Concepts, **and**

GSP 101L (1) Geospatial Concepts Lab

SOIL 260 (3) Intro to Soil Science

STAT 108 (3) Elementary Statistics, **or**

STAT 108i (3) Elementary Statistics with Integrated Support [Coreq: STAT 8]

*Take all lower division courses before beginning upper division work.*

### **Upper Division**

ESM 305 (3) Environmental Conflict Resolution

FOR 311 (4) Forest Mensuration & Growth

FOR 331 (3) Silvics — Foundation of Silviculture

FOR 365 (3) Forest Financial Administration

- FOR 432 (4) Silviculture  
 FOR 359 (3) CA & US Forest & Wildland Policy  
 FOR 479 (3) Forestry Capstone  
 WSHD 310 (4) Hydrology & Watershed Management

### Concentrations

Complete **one** concentration to fulfill the requirements of the major.

#### Forest Hydrology Concentration (29 units)

See core courses.

##### Lower Division

- GEOL 109 (4) General Geology  
 GSP 216 (3) Intro to Remote Sensing  
 GSP 270 (3) Geographic Information Science (GIS)  
 MATH 105 (3) Calculus for the Biological Sciences & Natural Resources  
 PHYX 106 (4) College Physics: Mechanics & Heat, **or**  
 PHYX 109 (4) General Physics A: Mechanics

##### Upper Division

- FOR 471 (3) Forest Administration & Ethics  
 GEOL 306 (3) General Geomorphology  
 SOIL 467 (3) Soil Physics  
 WSHD 333 (3) Wildland Water Quality, **or**  
 WSHD 424 (3) Watershed Hydrology

This program meets the qualifications for "Forester" and for "Hydrologist" in federal employment.

#### Forest Operations Concentration (29 units)

See core courses.

##### Lower Division

- GSP 216 (3) Intro to Remote Sensing  
 GSP 270 (3) Geographic Information Science (GIS)

##### Upper Division

- FISH 300 (3) Intro to Fishery Biology, **or**  
 RRS 306 (3) Wildland Resource Principles  
 FOR 350 (3) Forest Harvesting Systems  
 FOR 353 (3) Forest Road Location & Design  
 FOR 450 (3) Harvesting Systems Design & Cost Analysis  
 FOR 471 (3) Forest Administration & Ethics

- FOR 475 (3) Forest Management Decision Making  
 FOR 476 (2) Advanced Forest Management

Complete one of the following courses.

- FOR 423 (3) Wildland Fuels Management  
 FOR 431 (3) Forest Restoration  
 WSHD 458 (3) Climate Change & Land Use

This program meets the qualifications for "Forester" in federal employment.

#### Forest Restoration Concentration (29 units)

See core courses.

##### Lower Division

- GSP 216 (3) Intro to Remote Sensing  
 GSP 270 (3) Geographic Information Science (GIS)  
 FOR 321 (3) Fire Ecology

##### Upper Division

- FISH 300 (3) Intro to Fishery Biology, **or**  
 RRS 306 (3) Wildland Resource Principles  
 FOR 430 (3) Forest Ecosystems  
 FOR 471 (3) Forest Administration & Ethics  
 FOR 475 (3) Forest Management Decision Making  
 FOR 476 (2) Advanced Forest Management

Complete two of the following courses.

- BOT 394 (3) Forest Pathology  
 ESM 425 (3) Environmental Impact Assessment  
 FOR 350 (3) Forest Harvesting Systems  
 FOR 353 (3) Forest Road Location & Design  
 FOR 374 (3) Wilderness Area Management  
 FOR 423 (3) Wildland Fuels Management  
 FOR 431 (3) Forest Restoration  
 GSP 370 (3) Intermediate Geographic Information Science (GIS)  
 RRS 430 (3) Wildland Restoration & Development  
 SOIL 468 (3) Intro to Agroforestry  
 WSHD 424 (3) Watershed Hydrology  
 WSHD 458 (3) Climate Change & Land Use

This program meets the qualifications for "Forester" in federal employment.

#### Forest Soils Concentration (28 units)

See core courses.

##### Lower Division

- GEOL 109 (4) General Geology  
 GSP 216 (3) Intro to Remote Sensing  
 GSP 270 (3) Geographic Information Science (GIS)

##### Upper Division

- FISH 300 (3) Intro to Fishery Biology, **or**  
 RRS 306 (3) Wildland Resource Principles  
 FOR 471 (3) Forest Administration & Ethics  
 SOIL 360 (3) Origin & Classification of Soils  
 SOIL 460 (3) Wildland Soil Management & Erosion Control.

Complete two of the following courses.

- SOIL 363 (3) Wetland Soils  
 SOIL 462 (3) Soil Fertility  
 SOIL 465 (3) Soil Microbiology  
 SOIL 467 (3) Soil Physics

This program meets the qualifications for "Forester," "Soil Scientist," and "Soil Conservationist" in federal employment.

#### Tribal Forestry Concentration (31 units)

See core courses.

##### Lower Division

- ANTH 105 (3) Archaeology and World Prehistory  
 NAS 104 (3) Introduction to Native American Studies  
 NAS 200 (3) Indigenous Peoples in US History  
 GSP 216 (3) Intro to Remote Sensing, **or**  
 GSP 270 (3) Geographic Information Science (GIS)

##### Upper Division

- FISH 300 (3) Intro to Fishery Biology  
 FOR 321 (3) Fire Ecology  
 NAS 331 (3) Indigenous Natural Resource Management Practices  
 NAS 361 (3) Tribal Sovereignty, Tribal Citizens, **or**  
 NAS 362 (3) Tribal Governance & Leadership  
 NAS 364 (4) Federal Indian Law I, **or**  
 NAS 365 (4) Federal Indian Law II  
 NAS 468 (3) Tribal Justice Systems, **or**  
 NAS 325 (3) Native Tribes of California

This program meets the qualifications for "Forester" in federal employment.

### Wildland Fire Management Concentration (29 units)

See core courses.

#### Lower Division

- GSP 216 (3) Intro to Remote Sensing  
GSP 270 (3) Geographic Information Science (GIS)

#### Upper Division

- FISH 300 (3) Intro to Fishery Biology, **or**  
RRS 306 (3) Wildland Resource Principles  
  
FOR 321 (3) Fire Ecology  
FOR 323 (3) Wildland Fire Behavior & Use  
  
FOR 423 (3) Wildland Fuels Management  
FOR 424 (3) Wildland Fire Internship  
FOR 471 (3) Forest Administration & Ethics  
FOR 476 (2) Advanced Forest Management

Complete one of the following courses.

- FOR 431 (3) Forest Restoration  
FOR 475 (3) Forest Management Decision Making  
GSP 370 (3) Intermediate Geographic Information Science (GIS)  
RRS 370 (3) Wildland Ecology Principles  
WHSD 458 (3) Climate Change & Land Use

This program meets the qualifications for "Forester" in federal employment.

### REQUIREMENTS FOR THE MINORS

#### Fire Ecology Minor

Total units required for the minor: 15

#### Required Courses

- FOR 130 (3) Dendrology, **or** an approved course in plant taxonomy  
  
FOR 131 (3) Forest Ecology, **or** an approved course in ecology  
  
FOR 321 (3) Fire Ecology  
FOR 323 (3) Wildland Fire Behavior & Use  
FOR 423 (3) Wildland Fuels Management

#### Forestry Minor

Total units required for the minor: 16

#### Required courses

- FOR 130 (3) Dendrology  
FOR 131 (3) Forest Ecology  
FOR 210 (4) Forest Measurements and Biometry  
FOR 315 (3) Forest Management

Complete one of the following four courses.

- FOR 302 (3) Forest Ecosystems & People  
FOR 321 (3) Fire Ecology  
FOR 374 (3) Wilderness Area Mgmt.  
FOR 431 (3) Forest Restoration

#### Watershed Management Minor

See Watershed Management

